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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,406	05/19/2000	Daniel H. Greene	D/A0041	7909

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John E Beck
Xerox Corporation
Xerox Square 20A
Rochester, NY 14644

EXAMINER

LAROSE, COLIN M

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/574,406	GREENE ET AL.	
	Examiner	Art Unit	
	Colin M. LaRose	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-12,18 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-6,8,13-17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Arguments

1. Applicant's arguments filed 14 September 2005, have been entered and made of record.

Response to Applicants' Arguments

2. Applicant's arguments with respect to independent claims 1, 10, and 11 have been considered but are not persuasive. Applicant discusses the merits of Lopresti on pp. 9-10 and Visser on p. 10. However, it does not appear that Applicant has presented sufficient remarks specifically rebutting the combination of the two prior art references. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The only remark directed to the combination of Lopresti and Visser appears in the first full paragraph on p. 11, which states that "the combination would not provide an accurate reconstruction of the originally scanned symbol data." No evidence or other reasoning is presented to support such a conclusion. Lopresti expressly teaches using a "secondary set of encoding data" – such as machine-readable document markers (see figs. 2 and 6) – to aid in rewriting the candidate set of symbol data, and Visser, as discussed in the previous Office action, teaches the advantages of employing an event library to correct misspellings in text. There is nothing to suggest that including Visser's event library with Lopresti's system in order to achieve the claimed invention would provide an inaccurate reconstruction of the originally

Art Unit: 2627

scanned data. Rather, it appears that the reconstructed data would be more accurate by employing an event library to correct mistakes.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 10 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,748,807 to Lopresti et al. (hereinafter "Lopresti") and U.S. Patent 6,023,536 by Visser.

Regarding claim 1, Lopresti discloses a method for decoding image data for a hardcopy document, comprising:

recording a scanned representation of the hardcopy document (column 7, lines 6-7) that includes a primary set of symbol data and a secondary set of encoding data (column 6, lines 41-58); the primary set of symbol data providing a first channel of human readable information rendered on the hardcopy document (column 6, lines 41-46); the secondary set of encoding data providing a second channel of machine readable information rendered on the hardcopy document (column 6, lines 51-58);

receiving a decoded form of the scanned representation of the hardcopy document from a decoding module to define a candidate set of symbol data (column 7, lines 11-13); and

rewriting, independent of the decoding module, the candidate set of symbol data using the secondary set of encoding data (column 7, lines 27-31; column 9, lines 29-33).

Lopresti does not disclose an event library identifying likely failures encountered when the scanned representation of the hardcopy document is decoded, wherein the event library comprises a rule that represents a transformation.

Visser discloses a system for correcting errors in optically scanned characters. In particular, Visser discloses the generation of likely “error patterns” in memory (see figures 3 and 4). When determining whether an error in a character string has occurred, the inputted character string is compared to the error patterns stored in memory. When a character string matches a pre-determined “fault pattern,” the character string is deemed to have been misspelled and is transformed into a “correct pattern.” Figure 5 shows details of the stored errors patterns.

The stored error patterns define certain events, called “fault patterns” (such as transposed, missing, or duplicated letters). Upon detection of an event, the inputted pattern is transformed into a “correct pattern,” subject to a rule that determines the type of transformation. For example, in error pattern [4], two letters of the same value are transformed into a single letter of that value. Also, rules regarding “conditions” and “weights” imposed on the transformation are defined in the error pattern memory. See e.g. column 7, lines 5-60.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lopresti by Visser to utilize an event library (which identifies likely failures and comprises a rule that represents a transformation) to aid in rewriting the candidate set of symbol data, as claimed, since Visser discloses that employing an event library (i.e. likely “error pattern”

Art Unit: 2627

transformations as shown in figure 5) facilitates the character recognition and correction process.

See e.g. column 7, lines 5-12.

Claim 10 is drawn to an apparatus corresponding to the method of claim 1. A discussion similar to that presented above for claim 1 is applicable to claim 10. Claim 11 is similar to claim 10, except that it recites a scanner, instead of a means for recording. Lopresti discloses a scanner (Fig.1, element 16).

With regard to claim 12, Lopresti discloses the apparatus according to claim 11, further comprising a module for decoding the secondary set of encoding data for use by the rewrite module (column 8, lines 33-35).

5. Claims 7, 9, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lopresti, Visser and U.S. Patent 5,594,809 to Kopec et al. (hereinafter "Kopec").

Regarding claims 7 and 18, Lopresti does not disclose that the decoding module performs dynamic programming to decode the scanned representation of the hardcopy document.

However, Kopec discloses a decoder based on dynamic programming for decoding (column 44, lines 49-52). Kopec's dynamic programming possesses inherent advantages with regard to decoding. Given this, and Lopresti's suggestion of using dynamic programming (column 10, lines 26-27), it would therefore have been obvious to one of ordinary skill in the art to utilize a decoding module which performs dynamic programming in Lopresti's system.

Regarding claims 9 and 20, Lopresti does not disclose that the decoded form of the scanned representation includes certainty estimates of the candidate set of symbol data.

However, this is well known in the art. Kopec teaches likelihood measurements for the decoded

Art Unit: 2627

image (column 45, lines 27). This is, in essence, certainty estimates. In modifying Lopresti's system according to Kopec (note previous discussion), it would have been further obvious to one of ordinary skill in the art to employ certainty estimates because it would provide improved decoding.

Allowable Subject Matter

6. Claims 2-6, 8, 13-17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2627

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CML
Group Art Unit 2627
15 December 2005



VIKRAM BALI
PRIMARY EXAMINER